× 1, of the Saskatchewan plant (*Bourgeau*, 1858), the first specimen cited by its author for *B. alaskana* Sargent: FIG. 2, fruiting bract, × 4, and FIG. 3, samara, × 4, of the Prince Albert material, *Macoun*, no. 12,952[a]; FIG. 4, fruiting bract, × 4, and FIG. 5, samara, × 4, from near Fairbanks, Alaska, *Ynez Mexia*, no. 2291.

PLATE 973, B. BOREALIS Spach: FIG. 1, branches, × 1, from Glenwood, Newfoundland, *Fernald & Wiegand*, no. 5308; FIG. 2, fruiting branch, × 1, from Glenwood, *Fernald & Wiegand*, no. 5309; FIG. 3, tip of young branch, × 5, from no. 5309; FIG. 4, fruiting bract, × 4, and FIG. 5, samara, × 4, from base of Blomidon, Bay of Islands, Newfoundland, *Fernald & Wiegand*, no. 3246.

PLATE 974, FIGS. 1–5, B. UBER (Ashe) Fernald: FIG. 1, portion, × 1, of ISOTYPE in Herb. Arnold Arboretum; FIG. 2, upper surface of leaf, × 2, to show venation and toothing, from ISOTYPE; FIG. 3, portion of lower surface of leaf, × 2, from ISOTYPE; FIG. 4, fruiting bract, × 4, and FIG. 5, samara, × 4, from ISOTYPE. FIGS. 6 and 7, B. LENTA L.: FIG. 6, portion of lower surface of leaf, × 1, to show venation and toothing, from Jamaica Plain, Massachusetts, August 25, 1885, *C. E. Faxon;* FIG. 7, fruiting bract, × 4, from same specimen.

PLATE 975, FIGS. 1–4, B. TERRAE-NOVAE Fernald: FIG. 1, portion of TYPE, × 1: FIG. 2, tip of branchlet, × 5, from Goose Pond, upper Humber River, Newfoundland, *Fernald & Wiegand*, no. 3272; FIG. 3, fruiting bracts, × 10, and FIG. 4, nutlet, × 10, from TYPE. FIGS. 5–7, B. NANA L.: FIG. 5, tip of branchlet, × 5, from Velmunden, Norway, July 23, 1909, *Fr. Lange;* FIG. 6, fruiting bract, × 4, and FIG. 7, samara, × 10, from the *Lange* specimen.

(*To be continued*)

A NEW SPECIES OF ANULOCAULIS FROM SOUTHWESTERN TEXAS AND ADJACENT NEW MEXICO

U. T. WATERFALL

SEVERAL collections of *Anulocaulis* were made by the author while botanizing in the Transpecos Region of southwestern Texas and adjacent New Mexico during the summers of 1942 and 1943, and October, 1944. The majority of these were of a plant having large, pallid, eglandular leaves, and long flowers. One collection, my no. 5026 from near the Finlay gypsum quarry in Hudspeth County, was characterized by smaller, greener, papillate-glandular leaves, and by smaller flowers. The latter plant agrees with Torrey's description of *Boerhaavia leiosolena*,[1] the type of which was taken along the Rio Grande about 50 miles southeast of Finlay. The other specimens do not agree with it in several respects.

Most authors have treated the plants as one species, their descriptions merging the characteristics of Torrey's plant with those of later collections which have been almost entirely of the

[1] Torrey, John. *Botany of the Mexican Boundary*, 172. 1859.

proposed new species. The only collections of true *A. leiosolenus* I have seen in the material borrowed from the Gray Herbarium are my no. 5026, mentioned above, and Bigelow's specimen from "the Great Canon of the Rio Grande", presumably near the present location of Indian Hot Springs in southern Hudspeth County. Dr. I. M. Johnston recognized this situation in his account of the *Plants of Coahuila, Eastern Chihuahua, and Adjoining Zacatecas and Durango*[1], citing under *Anulocaulis leiosolenus* only the specimens listed above.

This, the typical variety, *Anulocaulis leiosolenus* (Torr.) Standl., var. **typicus,** nom. nov. (*Boerhaavia leiosolena* Torr., Bot. Mex. Bound. 172. 1859), appears to be a localized plant restricted to gypsum habitats in the southern part of Hudspeth County, while its var. *lasianthus* Jtn. is isolated in the Big Bend[2]. The proposed new species is much wider-ranging, being found on the great Permian gypsum beds of Culberson and Reeves Counties, Texas, in adjacent Eddy County, New Mexico, and as far north as the gypsum deposits of the Comanchean Bluffs east of Roswell, Chaves County, New Mexico. It is an obligate gypsophile, as apparently are other members of the genus.

ANULOCAULIS **gypsogenus,** n. sp. *Anulocaulis leiosolenus* (Torr.) Standl., Contr. U. S. Nat. Herb. **12.** 375. 1909, *in part.* Not *Boerhaavia leiosolena* Torr. in Bot. Mex. Bound. 172. 1859. —Plant perennial, erect, 8–12 dm. high from a woody root; stems glabrous, usually with an irregular glutinous band on each of the internodes; leaves opposite, mostly from the crowded lower nodes, thus appearing basal; leaf-blades ovate-cordate to reniform-cordate, 7–19 cm. long, 6–23 cm. wide, coriaceous, pallid, glabrous, never glandular-tuberculate as in *A. leiosolenus;* panicle-branches about ⅔ the height of the plant, the ends of the several opposite branches tending to be somewhat closely several-flowered, floral bracts ovate to ovate-lanceolate with acuminate tips; perianths large, about 3–3.5 cm. long, greenish-white suffused with pink toward the limb; lower part of perianth tubular, upper ⅓ funnel-form, 5-lobed, the lobes about 4 mm. long, each lobe deeply bifid and having a prominent midvein extending through the tube to the triangular sinus where it is minutely excurrent; stamens 3, unequal, exserted, 4–6.5 cm. long; bases of filaments unequally united into a short hypogynous tube which is about as long as the ovary; style filiform, extending

[1] Johnston, I. M., *Journ. Arn. Arb.* XXV, 174–175. 1944.
[2] Op. cit. 175.

about 1 cm. beyond the stamens; stigma minutely capitate; anthocarp turbinate, 5–7 mm. long, 4–5 mm. wide, surrounded just below the middle with a reflexed wing about 1 mm. wide, lower part of fruit narrowly conical, upper part hemispherical, prominently 10-ridged.

ANULOCAULIS **gypsogenus,** sp. nov. Planta perennis, e caudice lignoso erecta 8–12 dm. alta; caulibus glabris, internodiis annulo glutinoso irregulari cinctis; foliis oppositis, maxima parte e nodis inferioribus congestis, sicut basalibus: laminis ovato-cordatis vel reniformi-cordatis, 7–19 cm. longis, 6–23 cm. latis, coriaceis, pallidis, glabris, haud glandulari-tuberculatis ut apud *A. leiosolenum;* ramis paniculae pluribus oppositis, apicem versus plus minusve dense plurifloris; bracteis ovatis vel ovato-lanceolatis acuminatis; perianthio magno, ca. 3–3.5 cm. longo, tubo viridi-albido, limbo rosaceo-albido, ca. 1.5 cm. diametro, 5-lobato, lobis ca. 4 mm. longis, bifidis, vena mediana ad imum sinum triangulare inter lobos ca. 3 mm. altum brevissime excurrente; staminibus 3, inaequalibus, exsertis, 4–6 cm. longis, basibus filamentorum in tubum hypogynum ovario subaequilongum inaequaliter adnatis; stylis filiformibus, 5–7.5 cm. longis; stigmatibus minute capitatis; anthocarpiis turbinatis, 5–7 mm. longis, 4–5 mm. diametro, ala angusta reflexa ca. 1 mm. lata infra mediam circumcinctis; parte inferiore fructus anguste conica, parte superiore hemisphaerica, 10-costata.

The TYPE is the author's no. 5701 deposited in the Gray Herbarium. Isotypes are in the Herbarium of the Missouri Botanical Garden, the Herbarium of the New York Botanical Garden, and the author's private herbarium. This collection was taken from gypsum strata on the Comanchean Bluffs on the east side of the Pecos River, 7 miles east of Roswell, Chaves County, New Mexico. Here it grew in association with other gypsophiles characteristic of similar habitats farther south in Transpecos Texas. These include: *Bouteloua breviseta, Sporobolus Nealleyi, Selinocarpus lanceolatus, Mentzelia humilis, Coldenia hispidissima, Gaillardia multiceps, Sartwellia Flaveriae* and *Dicranocarpus parviflorus.*

SPECIMENS EXAMINED: TEXAS, CULBERSON COUNTY: *Cory* 1535, Millers Brothers Ranch (central Culberson Co.), June 17, 1928. REEVES COUNTY: *Waterfall* 4258 from Screw Bean Arroyo near Texas-New Mexico Boundary. COUNTY UNDETERMINED, *Havard* 87 from bluffs of Deleware Creek, West Texas (northern Reeves or Culberson Co.). NEW MEXICO: CHAVES COUNTY: *Waterfall* 4294 from gypsum of Comanchean Bluffs, 7 miles east of Roswell, Aug. 23, 1942; *Waterfall* 5701, TYPE, same site, Oct. 9,

1944. EDDY COUNTY: *Strandtman* 6, New Mexico, near Texas State line, Aug. 21, 1941; *Waterfall* 5721 from gypsum hills extending north from the Culberson Plateau, 3 miles north of state line near U. S. Highway 62, Oct. 9, 1944.

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Wynnewood, Oklahoma

CONVOLVULUS WALLICHIANA AT SWARTHMORE, PENNSYLVANIA.—Among the plantings around Swarthmore College, Swarthmore, Pa., there grows a species of *Convolvulus* which is rapidly becoming a weed. This plant was first observed about three years ago but little attention was paid to it.

Examination of all keys available failed to establish the identity of this species. It resembles *C. sepium* very closely but is much smaller and the leaf-characters are somewhat different. The specimen was forwarded to the Gray Herbarium where it was identified as *Convolvulus Wallichianus* Spreng., a native of India, China, and adjacent parts of Asia. According to report this is the first specimen collected in America.

The source of this plant at Swarthmore can not be determined with any certainty. It was found growing among some narcissus and near an ilex. The narcissus bulbs came from Germantown, Pa., and much of the shrubbery came from Long Island, N. Y. In addition a great deal of mushroom soil has been added from time to time from New York.

The plant is very difficult to exterminate and is likely to become a nuisance. At present it is found in about five separate areas in and around the buildings.—SAMUEL C. PALMER, Swarthmore College.

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